DEPARTMENT OF TRANSPORTATION
HAZARDOUS MATERIALS REGULATIONS BOARD
WASHINGTON, D.C. 20590

Title 49—TRANSPORTATION

Chapter I—Hazardous Materials Regulations Board, Department of Transportation

[Docket No. HM-22; Amdts. 171-4, 173-16, 177-8, 178-7]

MATTER INCORPORATED BY REFERENCE; REQUIREMENTS FOR SHIPPING REFRIGERATING MACHINES

The purpose of these amendments to the Hazardous Materials Regulations of the Department of Transportation is to (1) add a section specifically stating the terms by which material is incorporated by reference in these regulations and the availability of the material incorporated by reference; (2) make appropriate changes throughout the regulations consistent with the proposed new section on incorporation by reference; and (3) make certain changes in the requirements for shipping refrigerating machines.

On April 23, 1969, the Hazardous Materials Regulations Board published a notice of proposed rule making, Docket No. HM-22; Notice No. 69-10 (34 F.R. 6797) which proposed to amend 49 CFR to state the terms by which material is incorporated by reference in the Hazardous Materials Regulations and the availability of the material incorporated by reference. It was also proposed to modify the exemptions for refrigerating machines by (1) requiring pressure vessels installed therein to be equipped with shut-off valves and (2) to require marking of shipping name on packages regardless of the mode of transportation.

Incorporation by reference. Of the comments received in response to the notice no exception was taken to the provisions stating the terms by which material is incorporated by reference. Certain areas of editorial inconsistency were pointed out and have been corrected.

In addition to the specific sections set forth in the notice, this amendment makes minor changes in a number of additional sections where there is reference to the ASME Code, ASTM Standards, NFPA Standards, and CGA Pamphlets. The Board recognizes that there are additional incorporations by reference not affected by this amendment that require updating, and it is intended to correct these as needed in future rule making actions.

One commenter recommended that NGPA Publication 2140 (1968 edition) be recognized in proposed § 171.7(d). Recent proposals in Docket No. HM-34; Notice No. 69-26, if adopted, would remove reference to the aforementioned publication from various sections of the regulations. Therefore, the reference to NGPA proposed to be included in § 171.7(c)(4) has not been included in this amendment. When final action on Notice 69-26 is taken, any necessary changes in § 171.7 will be made.

Another commenter requested that specification MC 331 be further amended to require that the designation "WF" be on the tank identification plate and the manufacturer's data report to indicate compliance with the wet fluorescent magnetic particle test for tanks constructed in accordance with Part UHT of the ASME Code. This proposal has not been made a part of this amendment since it is beyond the scope of this rule making action.

One commenter suggested that the proposed wording of § 178.337-16(b) (1) and (2) be changed to differentiate between the type of welds in or on the tank shell and heads. The Board believes the proposal adequately expresses the requirement for the test of all welds and that there is no need to distinguish between pressure welds and nonpressure attachment welds.

Another commenter suggested modification of § 173.315(j)(1), as proposed in the notice, to permit construction of storage tanks to requirements of editions of the ASME Code dated subsequent to the 1959 edition. The parenthetical phrase included in § 173.315(j)(1) as proposed, was intended to authorize the continued use of storage tanks built to earlier editions of the ASME Code starting with the 1943 edition. Additional language has been included to make this intent clear.

Refrigerating machines. The last sentence in the Notice No. 69-10 preamble discussion of the proposed change to § 173.306(e)(1) stated, "It is also proposed to require marking of shipping name on packages regardless of the mode of transportation." Some commenters assumed that this sentence proposed a change that would affect the shipment of all hazardous materials that are presently exempt from the requirement that the shipping name be marked on the outside of the package. This was not the intent. As the proposed change in § 173.306(e)(1) indicated, this sentence related only to the marking of the shipping name of the refrigerant on each refrigerating machine. It was the Board's intent to require the common or chemical name of the refrigerant be marked on each refrigerating machine. Since the preamble of the notice indicated "shipping name" and not "common or chemical name", and the proposed language for such a requirement did not appear in the notice this matter will be handled in the future.

Interested persons have been given an opportunity to comment on the changes contained in this amendment and all comments received have been carefully considered.

In consideration of the foregoing, Parts 171, 173, 177, and 178 of Title 49, Code of Federal Regulations are amended as follows:

PART 171—GENERAL INFORMATION AND REGULATIONS

I. Part 171 is amended as follows:

(A) In the table of contents, § 171.6 is canceled; § 171.7 is amended as follows:

Sec.
171.6 [Canceled]
171.7 Matter incorporated by reference.

§ 171.6 [Canceled]

(B) Section 171.6 is canceled.

(C) Section 171.7 is amended in its entirety to read as follows:

§ 171.7 Matter incorporated by reference.

(a) There is incorporated by reference in Parts 170-179 of this chapter all matter referred to that is not specifically set forth. These materials are hereby made a part of the regulations in Parts 170-179 of this chapter. Unless the reference provides otherwise, matter subject to change is incorporated only as it is in effect on the date of issuance of the regulation referring to that matter.

(b) All incorporated matter is available for inspection in the Docket Room, Room 304, 400 Sixth Street SW., Washington, D.C. 20590.

(c) Matter incorporated by reference is available for distribution as follows:

(1) ASME: American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, N.Y. 10017.

(2) American National Standard: American National Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10018.

(3) CGA: Compressed Gas Association, Inc., 500 Fifth Avenue, New York, N.Y. 10036.

(4) Bureau of Explosives: Bureau of Explosives, Association of American Railroads, 2 Pennsylvania Plaza, New York, N.Y. 10001.

(5) AAR: Association of American Railroads, 59 East Van Buren Street, Chicago, Ill. 60605.

(6) ASTM: American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103.

(7) API: American Petroleum Institute, 1271 Avenue of the Americas, New York, N.Y. 10020.

(8) AISI: American Iron and Steel Institute, 1000 16th Street NW., Washington, D.C. 20036.

(9) The Chlorine Institute, 342 Madison Avenue, New York, N.Y. 10017.

(10) MCA: Manufacturing Chemists' Association, Inc., 1825 Connecticut Avenue, NW., Washington, D.C. 20009.

(11) NFPA: National Fire Protection Association, 60 Batterymarch Street, Boston, Mass. 02110.

(d) The full title and application of the matter incorporated by reference in Parts 170–179 of this chapter are as follows:

(1) ASME Code means sections VIII (Division 1) and IX of the 1968 edition of the "American Society of Mechanical Engineers Boiler and Pressure Vessel Code," and addenda thereto through December 31, 1968.

(2) AAR Specifications for Tank Cars means the 1969 edition of the "Association of American Railroads Specification for Tank Cars".

(3) Compressed Gas Association:

(i) CGA Pamphlet C–3 is titled, "Standards for Welding and Brazing on Thin Walled Containers," 1968 edition;

(ii) CGA Pamphlet C–6 is titled, "Standards for Visual Inspection of Compressed Gas Cylinders," 1968 edition;

(iii) CGA Pamphlet C–8 is titled, "Standard for Requalification of ICC–3HT Cylinders," 1969 edition;

(iv) CGA Pamphlet S–1.2 is titled, "Safety Relief Device Standards Part 2—Cargo and Portable Tanks for Compressed Gases," 1966 edition.

(4) American National Standard B9.1 is titled, "Safety Code for Mechanical Refrigeration," 1964 edition.

(5) American Society for Testing and Materials:

(i) ASTM D1310 is titled, "Standard Method of Test for Flash Point of Volatile Flammable Materials By Tag Open-Cup Apparatus," 1967 edition;

(ii) ASTM D323 is titled, "Test for Vapor Pressure of Petroleum Products (Reid Method)," 1958(68) edition.

(6) NFPA Pamphlet No. 58 is titled, "Standard for the Storage and Handling of Liquefied Petroleum Gases," 1969 edition.

PART 173—SHIPPERS

II. Part 173 is amended as follows:

(A) In § 173.31 the third sentence in paragraph (d)(9) is amended to read as follows:

§ 173.31 Qualification, maintenance, and use of tank cars.

* * * * *

(d) * * *

(9) * * * Acceptance or rejection of tanks must be based upon the methods used for cylinders in CGA Pamphlet C–6, and the results must be recorded on a suitable data sheet, the completed copies of which must be kept by the owner as a permanent record. * * *

* * * * *

(B) In § 173.34 the second sentence of paragraph (e)(10) is amended, footnote 1 referenced therein is canceled; the introductory text of paragraph (e)(13) is amended; the third sentence of paragraph (e)(14) is amended to read as follows:

§ 173.34 Qualification, maintenance, and use of cylinders.

* * * * *

(e) * * *

(10) * * * External visual inspection as described in CGA Pamphlet C–6 will, in addition to the following requirements prescribed herein, meet the requirements for visual inspection. * * *

* * * * *

(13) In addition to the requirements of this paragraph (e), cylinders marked DOT–3HT must be requalified in accordance with CGA Pamphlet C–8 and must comply with the following:

* * * * *

(14) * * * Examination must be as required by CGA Pamphlet C–6. * * *

* * * * *

§ 173.115 [Amended]

(C) In § 173.115 footnote 1 referenced in paragraph (a) is amended to read as follows:

[1] ASTM Test D1310.

§ 173.119 [Amended]

(D) In § 173.119 footnote 1 referenced in the introductory text of paragraphs (a) and (b) is amended to read as follows:

[1] ASTM Test D323.

(E) In § 173.126 the last sentence of paragraph (a) is amended, footnote 2 referenced therein is canceled as follows:

§ 173.126 Nickel carbonyl.

(a) * * * Visual inspection must be in accordance with CGA Pamphlet C–6.

* * * * *

(F) In § 173.300 paragraph (a) is amended to read as follows:

§ 173.300 Definitions.

(a) *Compressed gas.* The term "compressed gas" shall designate any material or mixture having in the container an absolute pressure exceeding 40 p.s.i. at 70° F. or, regardless of the pressure at 70° F., having an absolute pressure exceeding 104 p.s.i. at 130° F.; or any liquid flammable material having a vapor pressure exceeding 40 p.s.i. absolute at 100° F. as determined by ASTM Test D–323.

* * * * *

(G) In § 173.306 paragraph (e)(1) is amended to read as follows:

§ 173.306 Exemptions from compliance with regulations for shipping compressed gas.

* * * * *

(e) * * *

(1) Refrigerating machines or components thereof which are to be shipped only once to a point of installation are exempt from specification packaging, marking and labeling except that marking name of contents on outside container is required for shipments via carrier by water. Shipments for transportation by highway are exempt also from Part 177 of this chapter, except § 177.817, and Part 397 of this title. Shipments under these exemptions may be made only under the following conditions:

(i) Each pressure vessel may not contain more than 1,000 pounds of Group I refrigerant as classified in American National Standard B9.1 or not more than 50 pounds of refrigerant other than Group I.

(ii) Machines or components having two or more charged vessels may not contain an aggregate of more than 2,000 pounds of Group I refrigerant or more than 100 pounds of refrigerant other than Group I.

(iii) Each pressure vessel must be equipped with a safety device meeting the requirements of American National Standard B9.1.

(iv) Each pressure vessel must be equipped with a shut-off valve at each opening except openings used for safety devices and no other connection. Such valves must be closed prior to and during transportation.

(v) Pressure vessels must be manufactured, inspected and tested in accordance with American National Standard B9.1, or when over 6 inches internal diameter, in accordance with the ASME Code.

(vi) All parts subject to refrigerant pressure during shipment must be tested in accordance with American National Standard B9.1.

(vii) The liquid portion of the refrigerant, if any, may not completely fill any pressure vessel at 130° F.

(viii) The amount of refrigerant, if liquified, may not exceed the filling density prescribed in § 173.304.

* * * * *

(H) In § 173.315 NOTE 3 following the table in paragraph (a)(1) and the first sentence of Note 11 are amended; paragraph (j) (1) and (2) is amended to read as follows:

§ 173.315 Compressed gases in cargo tanks and portable tank containers.

(a) * * *

(1) * * *

NOTE 3: If cargo tanks and portable tank containers for carbon dioxide and nitrous oxide are designed to comply with the requirements of the ASME Code for Low Temperature Operation, the design pressure may be reduced to 100 p.s.i.g. or the controlled pressure, whichever is greater.

* * * * *

NOTE 11: Before an MC 330 or MC 331 (§ 178.337) cargo tank may be used for the transportation of vinyl fluoride, inhibited, the following requirements must be met: Tanks must be designed for a service temperature of minus 100°F. or below and comply with the requirements of the ASME Code for Low Temperature Operation. * * *

* * * * *

(j) * * *

(1) Each container must be constructed in compliance with the requirements of the ASME Code (containers built in compliance with earlier editions starting with 1943 are authorized) and must be marked to indicate compliance in the manner specified by the respective Code.

(2) Each container must be equipped with safety devices in compliance with the requirements for safety devices on containers as specified in NFPA Pamphlet No. 58.

* * * * *

PART 177—SHIPMENTS MADE BY WAY OF COMMON, CONTRACT, OR PRIVATE CARRIERS BY PUBLIC HIGHWAY

III. Part 177 is amended as follows:

(A) In § 177.824 the first sentence of paragraph (f)(2) is amended to read as follows:

§ 177.824 Retesting and inspection of cargo tanks.

* * * * *

(f) * * *

(2) The inspection required by subparagraph (1) of this paragraph must be conducted in accordance with the applicable parts of Appendix 6, section VIII of the ASME Code. * * *

* * * * *

PART 178—SHIPPING CONTAINER SPECIFICATIONS

IV. Part 178 is amended as follows:

(A) In § 178.47–8 the last sentence of paragraph (a) is amended, footnote 1 referenced therein is canceled as follows:

§ 178.47 Specification 4DS; inside containers, welded stainless steel for aircraft use.

§ 178.47–8 Manufacture.

(a) * * * Certification of welders and/or process is required in accordance with the sections of CGA Pamphlet C–3 that apply.

* * * * *

(B) In § 178.51–17 the second complete sentence in paragraph (a) is amended, footnote 2 referenced therein is canceled; the last sentence of paragraph (b) is amended; the first sentence of paragraph (c) is amended to read as follows:

§ 178.51 Specification 4BA; welded or brazed steel cylinders made of definitely prescribed steels.

§ 178.51–17 Tests of welds.

* * * * *

(a) * * * The specimen must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3. * * *

(b) * * * Specimens must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3.

(c) *Alternate guided-bend test.* This test may be used and must be as required by CGA Pamphlet C–3. * * *

(C) In § 178.54–8 the last sentence of paragraph (a)(2) is amended, footnote 2 referenced therein is canceled; in § 178.54–17 the second sentence of paragraph (a) is amended; in § 178.54–18 paragraph (a) is amended, footnote 2 referenced therein is canceled as follows:

§ 178.54 Specification 4B240–FLW; welded or welded and brazed cylinders with fusion-welded longitudinal seam.

§ 178.54–8 Manufacture.

(a) * * *

(2) * * * For welding the cylinder, procedure and operators must be qualified in accordance with the sections of CGA Pamplet C–3 that apply.

§ 178.54–17 Weld tests.

(a) * * * Specimens must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3.

* * * * *

§ 178.54–18 Radiographic examination.

(a) The techniques and acceptability of radiographic inspection must conform to the standards set forth in CGA Pamphlet C–3.

* * * * *

(D) In § 178.56–17 the second sentence of paragraph (a) is amended, footnote 2 referenced therein is canceled; the last sentence of paragraph (b) and the first sentence of paragraph (c) are amended to read as follows:

§ 178.56 Specification 4AA480; welded steel cylinders made of definitely prescribed steels.

§ 178.56–17 Tests of welds.

(a) * * * The specimens must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3. * * *

(b) * * * Specimens must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3.

(c) *Alternate guided-bend test.* This test may be used and must be as required by CGA Pamphlet C–3. * * *

(E) In § 178.57–9 the first sentence of paragraph (c) is amended, footnote 1 referenced therein is canceled; in § 178.57–17 the second sentence of paragraph (a), the last sentence of paragraph (b), and the first sentence of paragraph (c) are amended, footnote 2 referenced in paragraph (b) is canceled; in § 178.57–18 paragraph (a) is amended to read as follows:

§ 178.57 Specification 4L; welded cylinders insulated.

§ 178.57–9 Welding.

* * * * *

(c) For welding the cylinder, each procedure and operator must be qualified in accordance with the sections of CGA Pamphlet C–3 that apply. * * *

* * * * *

§ 178.57–17 Tests of welds.

(a) * * * The specimen must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3. * * *

(b) * * * Specimens must be taken across the particular seam being tested and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3.

(c) *Alternate guided-bend test.* This test may be used and must be as required by CGA Pamphlet C–3. * * *

* * * * *

§ 178.57–18 Radiographic examination.

(a) The techniques and acceptability of radiographic inspection must conform to the standards set forth in CGA Pamphlet C–3.

* * * * *

(F) In § 178.58–8 the last sentence of paragraph (a) is amended, footnote 2 referenced therein is canceled as follows:

§ 178.58 Specification 4DA; inside containers, welded steel for aircraft use.

§ 178.58–8 Manufacture.

(a) * * * Certification of welders and/or process required in accordance with the sections of CGA Pamphlet C–3 that apply.

* * * * *

(G) In § 178.60–18 the second sentence of paragraph (a)(1) is amended, footnote 2 referenced therein is canceled; the last sentence of paragraph (a)(2) and the first sentence of paragraph (a)(3) are amended to read as follows:

§ 178.60 Specification 8AL; steel cylinders with approved porous filling for acetylene.

§ 178.60–18 Weld tests.

(a) * * *

(1) * * * The specimen must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3. * * *

(2) * * * Specimens must be taken across the major seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3.

(3) *Alternate guided-bend test.* This test may be used and must be as required by CGA Pamphlet C–3. * * *

(H) In § 178.61–8 paragraph (d) is amended, footnote 1 referenced therein is canceled; in § 178.61–17 the second sentence of paragraph (a) is amended, footnote 1 referenced therein is canceled; the last sentence of paragraph (b) and the first sentence of paragraph (c) are amended; in § 178.61–18 the first sentence of paragraph (a) is amended to read as follows:

§ 178.61 Specification 4BW; welded steel cylinders made of definitely prescribed steels with electric-arc welded longitudinal seam.

§ 178.61–8 Manufacture.

* * * * *

(d) Welding procedure and operators must be qualified in accordance with the sections of CGA Pamphlet C–3 that apply.

§ 178.61–17 Tests of welds.

(a) * * * The specimen must be taken across the longitudinal seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3. * * *

(b) * * * Specimens must be taken across the longitudinal seam and must be prepared and tested in accordance with and must meet the requirements of CGA Pamphlet C–3.

(c) *Alternate guided bend test.* This test may be used and must be as required by CGA Pamphlet C–3. * * *

§ 178.61–18 Radiographic examination.

(a) Radiographic inspection must conform to the techniques and acceptability criteria set forth in CGA Pamphlet C–3. * * *

* * * * *

(I) In § 178.68–17 the third sentence of paragraph (b) is amended, footnote 1 referenced therein is canceled as follows:

§ 178.68 Specification 4E; welded aluminum cylinders.

§ 178.68–17 Weld tests.

* * * * *

(b) * * * The specimen must be bent to refusal in the guided bend test jig illustrated in paragraph 6.10 of CGA Pamphlet C–3. * * *

(J) In § 178.245–1 paragraph (a) is amended to read as follows:

§ 178.245 Specification 51; steel portable tanks.

§ 178.245–1 Requirements for design and construction.

(a) Tanks must be of seamless or welded steel construction or combination of both and must have in excess of 1,000 pounds water capacity. Fusion welded tanks must be postweld heat treated and radiographed to provide the highest joint efficiency provided by the ASME Code. Tanks must be designed and constructed in accordance with and fulfill the requirements of the ASME Code. Tanks constructed in accordance with the requirements of Part UHT of the ASME Code must comply with the following additional requirements:

(1) Welding procedure and welder performance tests must be made annually in accordance with section IX of the ASME Code. In addition to the essential variables named therein the following must be considered to be essential variables: Number of passes, thickness of plate, heat input per pass, and manufacturer's identification of rod and flux. The number of passes, thickness of plate and heat input per pass may not vary more than 25 percent from the procedure qualification. Records of the qualification must be retained for at least 5 years by the tank manufacturer and made available to duly identified representatives of the Department of Transportation or the owner of the tank.

(2) Impact tests must be made on a lot basis. A lot is defined as 100 tons or less of the same heat and having a thickness variation no greater than plus or minus 25 percent. The minimum impact required for full-sized specimens shall be 20 foot-pounds (or 10 foot-pounds for half-sized specimens) at 0° F. Charpy V-Notch in both the longitudinal and transverse direction. If the lot test does not pass this requirement, individual plates may be accepted if they individually meet this impact requirement.

* * * * *

(K) In § 178.255–1 paragraphs (a), (b), and (c) are amended; in § 178.255–2 paragraph (a) is amended to read as follows:

§ 178.255 Specification 60; steel portable tanks.

§ 178.255–1 General requirements.

(a) Tanks must be of fusion welded construction, cylindrical in shape with seamless heads concave to the pressure. Tank shells may be of seamless construction.

(b) Tanks must be designed and constructed in accordance with and fulfill all the requirements of the ASME Code.

(c) Tanks including all permanent attachments must be postweld heat treated as a unit.

* * * * *

§ 178.255–2 Material.

(a) Material used in the tank must be steel of good weldable quality and conform with the requirements of the ASME Code.

* * * * *

(L) In § 178.337–1 paragraph (a), Note 1 following paragraph (b) and paragraph (f) are amended; in § 178.337–2 paragraph (a) (1) and (2) is amended; in § 178.337–4 paragraphs (a), (b), and (e) are amended; in § 178.337–6 paragraph (a) is amended; in § 178.337–16 paragraphs (a) and (b) (1) and (2) are amended; in § 178.337–17 the last sentence of paragraph (a) is amended; in § 178.337–18 the first sentence of paragraph (a) is amended to read as follows:

§ 178.337 Specification MC 331; cargo tanks constructed of steel primarily for transportation of compressed gases as defined in the Compressed Gas Section. Requirements to be met in all particulars with respect to all such tanks constructed after September 1, 1965.

§ 178.337–1 General requirements.

(a) *ASME Code construction.* Tanks must be seamless or welded steel construction or combination of both and must be designed and constructed in accordance with and fulfill the requirements of the ASME Code. Each tank must also meet the following additional requirements.

(b) * * *

NOTE 1: The term "design pressure" as used in this specification, is identical to the term "maximum allowable working pressure" as used in the ASME Code.

* * * * *

(f) *Postweld heat treatment.* Postweld heat treatment must be as prescribed in the ASME Code except that each tank

constructed in accordance with Part UHT of the ASME Code must be postweld heat treated. Each chlorine tank must be fully radiographed and postweld heat treated in accordance with the provisions of the ASME Code under which it is constructed. Where postweld heat treatment is required, the tank must be treated as a unit after completion of all the welds in and or to the shells and heads. The method must be as prescribed in the ASME Code. Welded attachments to pads may be made after postweld heat treatment.

§ 178.337–2 Material.

(a) * * *

(1) All material used for construction of the tank and appurtenances must be suitable for use with the commodities to be transported therein and must comply with the requirements of the ASME Code and/or requirements of the American Society for Testing and Materials in all respects.

(2) Impact tests are required on steel used in fabrication of each tank constructed in accordance with Part UHT of the ASME Code. The tests must be made on a lot basis. A lot is defined as 100 tons or less of the same heat treatment processing lot having a thickness variation no greater than plus or minus 25 percent. The minimum impact required for full size specimens must be 20 foot-pounds in the longitudinal direction at −30° F., Charpy V-Notch and 15 foot-pounds in the transverse direction at −30° F., Charpy V-Notch. The required values for subsize specimens must be reduced in direct proportion to the cross-sectional area of the specimen beneath the notch. If a lot does not meet this requirement, individual plates may be accepted if they individually meet this requirement.

* * * * *

§ 178.337–4 Joints.

(a) Joints shall be as required by the ASME Code, with all undercutting in shell and head material repaired as specified therein.

(b) Welding procedure and welder performance tests must be made annually in accordance with section IX of the ASME Code. In addition to the essential variables named therein, the following must be considered to be essential variables: Number of passes; thickness of plate; heat input per pass; and manufacturer's identification of rod and flux. When fabrication is done in accordance with Part UHT of the ASME Code, filler material of nickel-molybdenum-vanadium type must not be used. The number of passes, thickness of plate, and heat input per pass may not vary more than 25 percent from the procedure or welder qualifications. Records of the qualification must be retained for at least 5 years by the tank manufacturer and made available to duly identified representatives of the Department of Transportation or the owner of the tank.

* * * * *

(e) The maximum tolerance for misalignment and butting up shall be in accordance with the ASME Code.

* * * * *

§ 178.337–6 Closure for manhole.

(a) Each tank constructed in accordance with Part UHT of the ASME Code and other tanks above 3,500 gallons water capacity must be provided with a manhole conforming to paragraph UG–46 (g)(1) and other requirements of the ASME Code.

§ 178.337–16 Testing.

(a) *Inspection and tests.* Inspection of materials of construction of the tank and its appurtenances and original test and inspection of the finished tank and its appurtenances must be as required by the ASME Code and as further required by this specification except that for tanks constructed in accordance with Part UHT of the ASME Code the original test pressure must be at least twice the tank design pressure.

(b) * * *

(1) Each tank constructed in accordance with Part UHT of the ASME Code must be subjected, after postweld heat treatment and hydrostatic tests, to a wet fluorescent magnetic particle inspection to be made on all welds in or on the tank shell and heads both inside and out. The method of inspection must conform to Appendix VI of the ASME Code, paragraph UA–70 through UA–72 except that permanent magnets shall not be used.

(2) On tanks of over 3,500 gallons water capacity other than those described in subparagraph (1) of this paragraph unless fully radiographed, a test must be made of all welds in or on the shell and heads both inside and outside by either the west fluorescent magnetic particle method conforming to Appendix VI of the ASME Code, liquid dye penetrant method, or ultrasonic testing in accordance with Appendix U of the ASME Code. Permanent magnets must not be used to perform the magnetic particle inspection.

* * * * *

§ 178.337–17 Marking.

(a) * * * The plate shall be plainly marked by stamping, embossing, or other means of forming letters into the metal of the plate, with the following information in addition to that required by the ASME Code, in characters at least $\frac{3}{8}$-inch high:

* * * * *

§ 178.337–18 Certification.

(a) For each tank the tank vehicle manufacturer shall supply and the owner shall obtain the tank manufacturer's data report required by the ASME Code, and a certificate stating that the completed tank vehicle is in complete compliance in all respects with specification MC 331 including the ASME Code. * * *

(M) In § 178.340–4 paragraph (a) is amended to read as follows:

§ 178.340 General design and construction requirements applicable to specifications MC 306 (§ 178.341), MC 307 (§ 178.342), and MC 312 (§ 178.343) cargo tanks.

§ 178.340–4 Structural integrity.

(a) *Maximum stress values.* The maximum calculated stress value must not exceed 20 percent of the minimum ultimate strength of the material as authorized in § 178.340–3, except when ASME Code pressure vessel design requirements apply.

* * * * *

(N) In § 178.342–1 the second sentence of paragraph (b) is amended to read as follows:

§ 178.342 Specification MC 307; cargo tanks.

§ 178.342–1 General requirements.

* * * * *

(b) * * * For working pressures in excess of 50 p.s.i.g. the tank must be designed in accordance with the requirements of the ASME Code.

* * * * *

(O) In § 178.343–1 the first sentence of paragraph (b) is amended to read as follows:

§ 178.343 Specification MC 312; cargo tanks.

§ 178.343–1 General requirements.

* * * * *

(b) Tank design: Cargo tanks built under this specification that are unloaded by pressure in excess of 15 p.s.i.g. must be designed and constructed in accordance with and fulfill all requirements of the ASME Code. * * *

* * * * *

These amendments are effective December 30, 1969.

(Secs. 831–835, title 18, United States Code; sec. 9, Department of Transportation Act (49 U.S.C. 1657); title VI, sec. 902(h), Federal Aviation Act of 1958 (49 U.S.C. 1421–1430, 1472(h)))

Issued in Washington, D.C., on November 7, 1969.

P. E. TRIMBLE,
Vice Admiral, U.S. Coast Guard,
Acting Commandant.

R. N. WHITMAN,
Administrator,
Federal Railroad Administration.

F. C. TURNER,
Federal Highway Administrator.

SAM SCHNEIDER,
Board Member, For the
Federal Aviation Administration.

[F.R. Doc. 69-13566; Filed, Nov. 13, 1969; 8:49 a.m.]